

FOREIGN REPORT

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How Russia hides its missiles

Within the past year the Soviet Union appears to have adopted new methods of concealment to keep the development of its latest nuclear weapons secret. It is not surprising that the Russians want to do this, but under the rules of the Salt-1 treaty both super-powers are obliged not to hide their missiles and bombers, so that each side can check whether the other is sticking to the treaty.

On January 28, 1980, the Soviet Union used "significant telemetry encryption" on the first flight test of a new missile. Telemetry encryption is the jargon for the use of codes to hide the data about the missile's performance which are transmitted back to earth. According to the American Defence Intelligence Agency: "If the Soviets continue to encrypt data at this level, the United States' ability to determine the missile's launch weight, throw weight and accuracy will be significantly lessened."

The missile in question is a new submarine-launched ballistic missile (SLBM), using solid fuel, which has been designated as the NE-4. The missile was launched from Nenoksa, but after a mechanical fault it crashed on the Taymyr peninsula. According to preliminary intelligence analysis, about 70% of the data transmitted during the missile's flight were encoded. The DIA noted:

Although the Soviets have encrypted part of the telemetry on their newest land-based ballistic missiles since 1974, this is the first identification of encryption in submarine-launched ballistic missiles telemetry. The unreadable data appear to include all of the guidance computer information and at least some of the propulsion and attitude measurements.

Such use of codes may have started earlier. Other intelligence sources say the Russians began an advanced code programme in July, 1978, for both land-based and sea-based missiles, including the new SS-N-19 cruise missile. And, according to another secret DIA report of March 7, 1980, the Russians used special codes for all four tests of a new version of the SS-18 missile which began in July, 1978, at Tyuratam.

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The history of deception

FOREIGN REPORT has obtained two top-secret American intelligence reports which indicate the variety of techniques the Russians have used over the past two decades to disguise their nuclear weapons from western intelligence. The two reports are an analysis prepared for the National Security Council in 1979 on Soviet compliance with Salt-II and an assessment in September, 1975, by the CIA - which is still considered highly relevant.

Both reports note that the Russians have developed an elaborate system of concealment and deception. The use of concealment to hide Russian strategic nuclear weapons has been observed by the United States since 1964. A total of 15 concealment techniques have been identified. They include (in order of discovery):

Disruptive painting (1964). This was used at bases for intercontinental ballistic missiles and was presumably designed to hide the missile complexes from air attack. Most of the paintwork was carried out between 1966 and 1968, but the paint brushes don't seem to have been used much since then.

Tonal blending (1964). It is not clear from the CIA report what this means: presumably it is just another way to camouflage missiles by the use of suitable colours. This technique was also discarded later.

Dummy roads and launch sites (1966). These were also designed to confuse bomber pilots. They were built mainly between 1966 and 1971. Dummy surface-to-air (Sam) missile sites were built after 1968. The NSC report says that between five and ten dummy Sam sites are still being built each year.

Satellite warning system (1966). This is designed to stop electronic emissions - especially from missiles and early-warning radars - when western intelligence satellites are in range. This system is still in use.

Missile covers (1967). Some of the covers for the missiles may simply have been intended to keep the rain and snow out, but the CIA reckons that many of the covers were intended to conceal the missiles underneath. The use of covers was especially pronounced from 1972 to 1975.

Submarine tunnels (1967). The Russians have built enough coastal tunnels to hide 20 or more nuclear-armed submarines from western detection.

Submarine covers (1970). The CIA was unable to decide whether canvas covers were being used for what it quaintly calls a "valid environmental reason" or to prevent the United States knowing whether the submarines underneath were ready for battle. The covers were used mainly in 1974 and 1975.

Dummy submarines (1971). Dummies of nuclear-missile submarines were observed in the period 1972-74 at bases in the Pacific and in the north of the Soviet Union. But none has been seen since 1974. The CIA argued that neither the dummy submarines nor the canvas covers seriously hampered the Americans' ability to maintain an accurate count of Soviet submarines. But, said the CIA, it did make it tricky to know how many submarines were in port at a given moment.

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Night tests (1973). A mobile missile, the SS-16 (later abandoned), was tested at night in 1973 to stop the Americans getting any information about it.

Covered rail sidings (1973). The Russians conceal missiles and other equipment as they enter and leave production plants, to hinder American estimates of the number of missiles being produced. This system is still being used.

Covered submarine hulls (1974). Hulls of submarines were partly covered at the shipyard at Severodvinsk in 1974, and completely covered after 1974. The aim is to stop the United States getting information about nuclear-missile submarines before they are launched.

Under the Salt-1 treaty, signed in 1972, the United States and the Soviet Union agreed not to interfere with the national technical means of verification of the other party and also not to use deliberate concealment measures which impede verification, by national technical means, of compliance with the provisions of this [treaty]. But there was a loophole: the treaty said that "this obligation shall not require changes in current construction, assembly, conversion or overhaul practices." The Russians interpreted this to mean that they could go on using concealment systems which were in use before 1972. According to the NSC report of 1979, "much of the Soviet concealment and deception effort in the area of strategic weapons deployment and development was initiated prior to May, 1972, and is therefore permitted under current practices."

During 1974, the Russians stepped up their programme of concealment - notably for SS-16 missiles and submarines. But they did nothing which breached the Salt agreement. However, the NSC report noted that there was concern in the United States about the expanding pattern of concealment activities.

The United States raised the issue at a meeting of the Salt monitoring commission between January 28 and February 13, 1975. It was reluctant to tell the Russians exactly what it knew about their concealment plans for fear of tipping them off about the extent of American intelligence, but it did complain about "the expanding pattern of concealment measures" in the Soviet Union. The Russians retorted that there was no "expanding pattern". The Americans made further complaints at a subsequent meeting of the commission between March 24th and May 6th of the same year. As a result of these complaints, the Russians decided to slow down their concealment programme: this was confirmed by American monitoring of communications inside the Soviet Union.

That is why the latest signs of the use of coded telemetry are worrying American intelligence experts: they suggest that the Russians are once again embarking on a major concealment exercise. The conclusion of the earlier CIA report still seems valid:

"We cannot exclude the possibility that Soviet leaders, if they believed they would succeed, would approve a programme of concealment and deception designed to help gain a strategic advantage over the United States."